BLACK BOX®
NETWORK SERVICES

CAT5 CLASSWORK PLUS & CLASSWORK PLUS
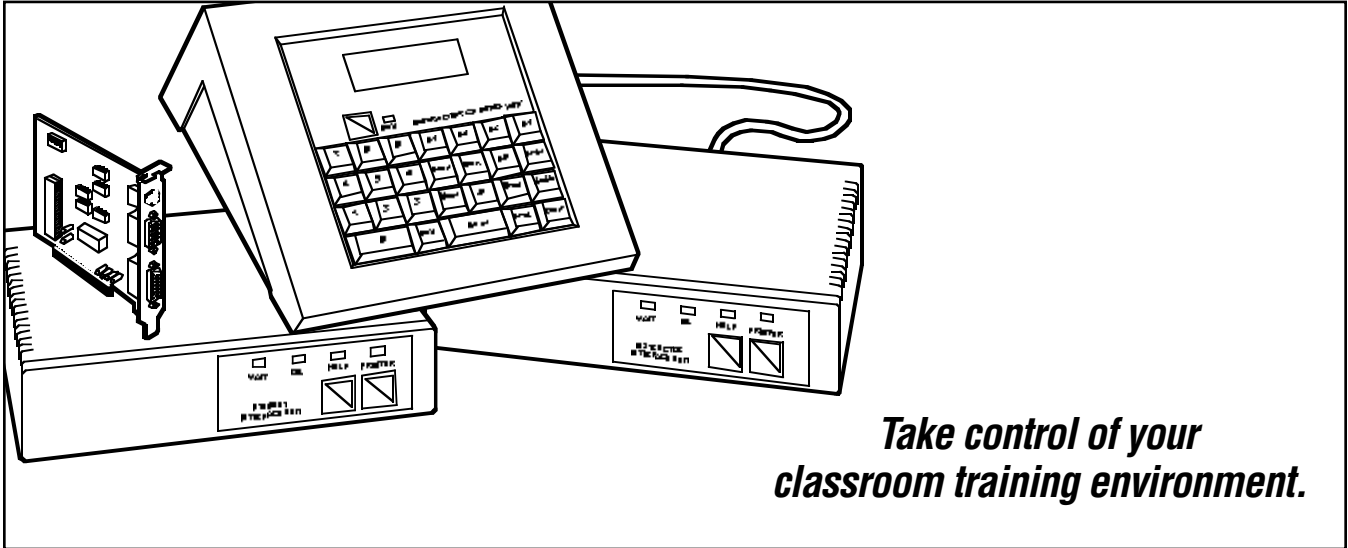
Take control of your classroom training environment.

Key Features

▶ *Use the instructor's monitor to view any student's screen.*

▶ *Get pinpoint or multiple control of your students' keyboards, mice, and monitors.*

▶ *Operate totally independent of network software.*

▶ *Instructor and student interface cards available for limited-space areas.*

▶ *CAT5 models can help you save on cabling costs.*

ClassWork Plus Interactive Display System is the total in-house computer training network that gives you pushbutton control of up to 63 students' computers via one long bus.

To set up your system, choose interface components for both the instructor and the individual users to be controlled by the instructor at a command station.

The Instructor Unit Kits consist of an Instructor Control Unit and an Instructor Interface Unit. The control unit has a function display and ergonomic click keypad to control all system functions; the interface unit connects the instructor's computer to the rest of the ClassWork Plus system, including the student computer-interface components.

We also offer components that enable you to expand your system to add more users.

Because the system operates transparent to operating system and network protocols, you can integrate it easily into your existing application. Use it to interconnect standalone computers or multiple workstations that are linked within a LAN.

From your command station, you can:

Demonstrate. At the touch of a button, project your computer screen to any, some, or all student monitors.

Monitor. Observe each student's screen. Or scan monitors sequentially with the adjustable automatic timer.

Interact. Take control of any keyboard and mouse. Display your monitor or a student's monitor to another student or to the class.

Capture attention. When you're lecturing and need your students' full attention, simply push a button

to darken their monitors and freeze their keyboards and mice.

Help. Students can push a Help button if they need additional instruction. An LED on the Instructor Unit lights to show which student is asking for help. Up to six students' Help requests can be stored at a time.

After a brief training session, you're ready to go. Your command unit is user-friendly so you spend your time teaching, not trouble-shooting.

We offer two families of ClassWork Plus solutions: one that uses special 25-conductor cable to link the instructor and users in a terminated daisychain and another that uses shielded CAT5 twisted-pair cable for all connections within a loop. For details on each, see **page 2**.

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The CAT5-based system:

Our CAT5 ClassWork Plus lets you (the instructor) control up to 31 daisychained PS/2 computers using CAT5 cable. This way, you have complete control over every student's monitor, mouse, and keyboard in the classroom.

But for even more connections (up to 63 daisychained computers), add the CAT5 ClassWork Plus Multiloop. With it, the system offers you transmission distances up to 980 feet (298.7 m). Without it, the system supports a transmission range of 360 feet (109.7 m).

Each CAT5 ClassWork Plus system uses:

- An Instructor Control Unit, which includes a keypad of pushbuttons for control and an LCD screen.
- An Instructor Interface Unit, which is a closed box that you connect to the instructor's position.
- A Student Unit, which is either an internal PCI card that you insert it in the student's computer or an external standalone box unit. (NOTE: Card and standalone versions are fully compatible with each other.)

If you plan to connect a whole host of PCs to your system, order the component kits (the PC Instructor Unit Kit and the PC or Standalone Student Unit Kit) and, if required, the Multiloop to link to more than 31 students. However, if you're planning a quite-limited application, order the Starter Kit, which enables you to connect up to three student PCs to the instructor.

The CAT5 ClassWork Plus supports IBM® compatible computers with PS/2® style keyboard and mouse connectors, and VGA, SVGA, or XGA video standards.

All keyboard, mouse, and monitor cables are included with each interface component you order. You only have to provide the system cable, which joins the Instructor Interface Unit and all Student Units in a loop back to the instructor's desk. Use foil twisted-pair (FTP) CAT5 or CAT5e cable as your system cable. (We strongly advise against using patch cable.)

To set up the CAT5 ClassWork Plus system, just connect one end of the system cable to the Student Unit's System Out port, connect the other cable end to the System In port of the next Student Unit, and complete the loop by connecting a system cable to the last Student Unit's System Out port and the Instructor Unit's System In port.

Once you've installed and connected all components, you can then assign ID numbers to each user within the system. You use these IDs to select individual or groups of student PCs via the Instructor Control Unit.

You can not only transfer screen images from the instructor to a student or group of students, but you can also transfer images from a student to the instructor or from a student to another student or group of students. You can also scan multiple screens and darken screens.

The Instructor Control Unit also enables you to scan at sequential intervals—whether you want to view the screens of all the students or just a group of students.

From the Instructor position, you can also take control of the keyboard and mouse of a particular student or transfer control from one student to another.

The standard system:

Available in both PC and Mac® versions, the standard ClassWork Plus Interactive Display System enables you to broadcast the display from an instructor's monitor to up to 99 daisychained student computers.

As with the CAT5-based version, the standard ClassWork Plus increases the efficiency of the lesson in the computerized classroom and gives the instructor better control over class resources.

For basic operation, you'll need one Instructor Control Unit and one Instructor Interface Unit, which is available either as as standalone unit or plug-in interface card for PC versions (the Mac version, included in a kit, can be ordered as a standalone unit only).

You'll also need one Student Interface Unit for each student station. If you're using a PC-type system, this can be either a standalone or card version (the Mac version is available as a standalone device only). Choosing an interface card instead of a standalone unit for your instructor and/or student stations can save you space and eliminate clutter.

The combination of an Instructor Unit Kit with a number of Student Kits provides the instructor with access to up 63 student computers. But you can expand the system further and connect up to 99 student computers if you're operating on the PC platform. Just add the ClassWork Plus Line Multiplier to the mix. You can also use the Line Multiplier to create up to five smaller buses (or branches) within one classroom of PCs.

If you want to consolidate your student connections, choose one of our 4-Port Student Hub models. These hubs, available with cables for either PS/2 or AT connections, offer all the same features as the single-port units but link up to four students' computers instead of one.

The system is connected as a daisychain topology and provides basic keyboard and mouse functions. Included with the ClassWork Plus components is a specially pinned system cable, which you can also order separately in various lengths for greater distances between units.
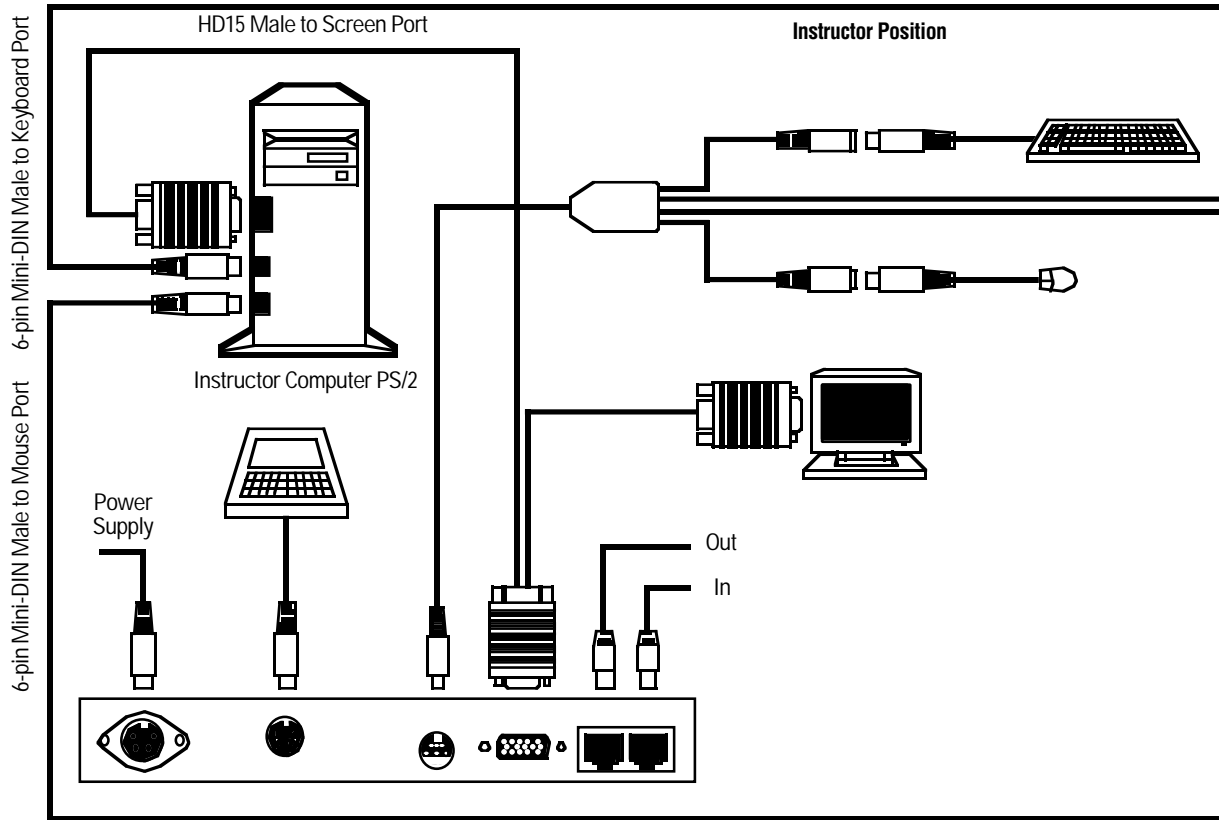
The instructor's position can be anywhere in the chain, either at the end or in the middle. Place each Student Unit and its set of cables near the appropriate student computer—Student Unit #1 near student #1, etc.—and assign ID numbers to each by setting DIP switches on the individual units. Every student in the system is allocated a two-digit number. You can connect the units in any order and add a terminator at each end of the daisychain.

The instructor has complete control, using a single keystroke to active certain functions. You can display the screen to the entire class or to chosen student groups. Or you can use the scanning function to display all student screens, or part of them, sequentially on the instructor screen for specified amount of time. The instructor can also interrupt all of the students, or just one of them, by darkening their screens and disconnecting their keyboards and mice.
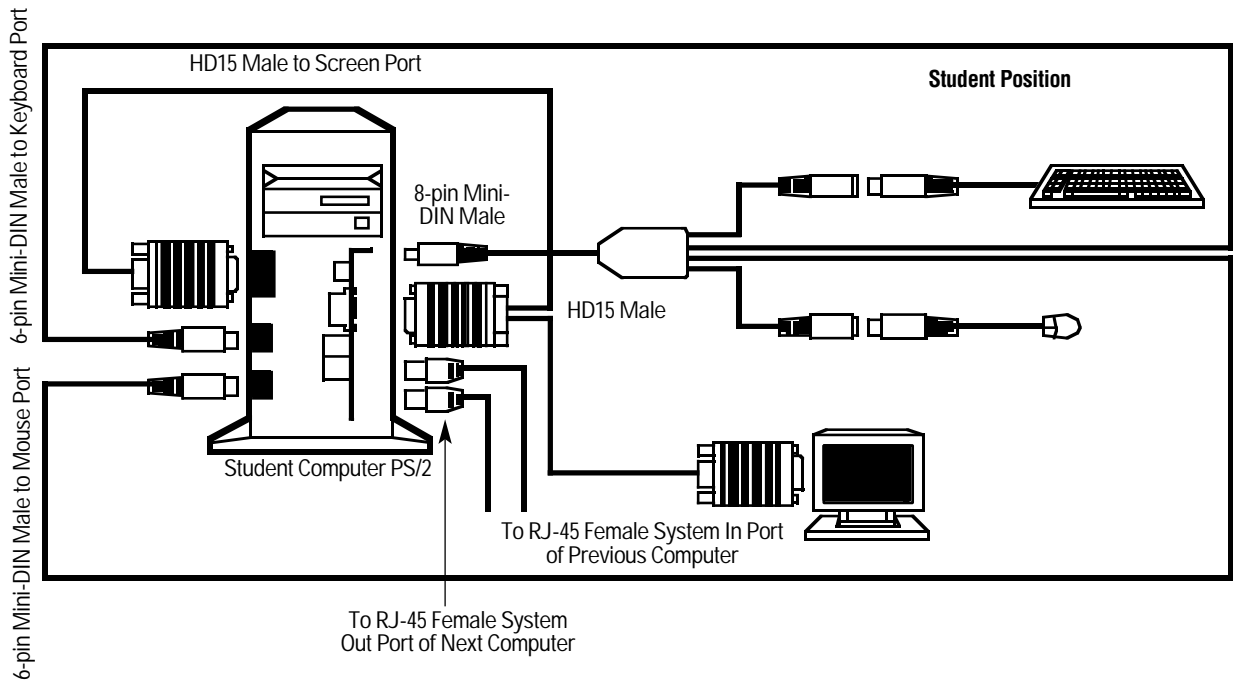
If needed, you can also take control of a station's keyboard and mouse or assign control of one station to another station.

The PC ClassWork Plus version also enables you to transmit files to or receive files from any student.

CAT5 ClassWork Plus Instructor Configuration.

HD15 Male to Screen Port

Instructor Position

6-pin Mini-DIN Male to Keyboard Port

6-pin Mini-DIN Male to Mouse Port

Instructor Computer PS/2

Power
Supply

Out

In

CAT5 ClassWork Plus Student Configuration.

HD15 Male to Screen Port

Student Position

6-pin Mini-DIN Male to Keyboard Port

6-pin Mini-DIN Male to Mouse Port

8-pin Mini-
DIN Male

HD15 Male

Student Computer PS/2

To RJ-45 Female System In Port
of Previous Computer

To RJ-45 Female System
Out Port of Next Computer

Use the ClassWork Plus Multiloop to add up to 63 computers to the CAT5 ClassWork Plus system.
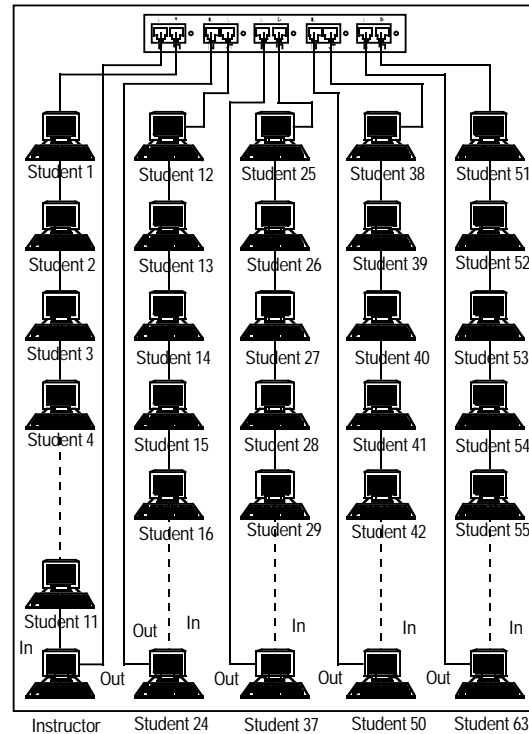
Specifications

CAT5 ClassWork Plus Instructor Interface Unit and Student Interface Card:

Number of Student PCs (Maximum): 63

Resolution (Maximum): 1280 x 1024

Connectors:
Instructor Control Unit:
(1) 5-pin DIN;
Instructor Interface Unit, Student Interface Card, Standalone PC Student Unit: (2) RJ-45 system ports, (1) HD15 F screen in/out, (1) 8-pin mini-DIN F for keyboard and mouse;
Instructor Interface Unit also has:
(1) 5-pin DIN F for control,
(1) 4-pin DIN F for power;
Multiloop: (10) RJ-45

Power:
Instructor Control Unit: From the Instructor Interface Unit;
Instructor Interface Unit, Standalone PC Student Unit, Multiloop:
Input: All except AC840AE-R2: 120 VAC, 60 Hz, 20 watts; AC840AE-R2: 230 VAC, 50 Hz, 20 watts;
Output: 9 VAC, 1400 mA

Student Interface Card: From the PC bus

Size: Instructor Control Unit:
3.6"H x 8.6"W x 9"D
(9.1 x 21.8 x 22.9 cm);
Instructor Interface Unit:
2"H x 8.9"W x 9"D
(5.1 x 22.6 x 22.9 cm);
Student Interface Card:
Half card;
Standalone PC Student Unit:
1"H x 6.8"W x 5.8"D
(2.5 x 17.3 x 14.7 cm);
Multiloop: 1.2"H x 8.7"W x 5.5"D
(3 x 22.1 x 14 cm)

ClassWork Plus or ClassWork Plus for Mac:

Maximum Number of Student Computers: 63 or 99 (with AC817A in PC environment)

Resolution: Up to 1280 x 1024

Connectors: Instructor Interface and Student Interface Units:
(2) DB25 F system ports,
PC version:
(1) HD15 M screen-in,
(1) HD15 F screen-out,
(1) DB9 F keyboard in/out,
(1) DB9 M mouse in/out,
(1) stereo jack (comm port);
Instructor Interface Unit also has

(1) 5-pin DIN Instructor Control Unit port;

PC Cards: (1) HD15 F monitor in/out, (1) 6-pin mini-DIN F keyboard/mouse in/out;

Student Hubs:
(4) DB25 M for CPU,
(4) DB25 F for KVM,
(2) DB25 F system ports,
(4) 6-pin mini-DIN F for audio,
(1) DB9 M (comm port)

Line Multiplier: (2) DB25 M

Mac version:
(1) DB15 M screen-in,
(1) DB15 F screen-out;
(1) DB9 F keyboard in/out,
(1) DB9 M mouse in/out,
(1) stereo jack (comm port);
Instructor Interface Unit also has
(1) 5-pin DIN Instructor Control Unit port

Power:
AC810A-R3, AC811A-R3, AC812A-R2, AC814A-R2:
Input: 120 VAC,
Output: 9 VAC, 1500 mA;
AC810AE-R3, AC811AE-R3, AC812AE-R2, AC814AE-R2:
Input: 230 VAC

PC Cards: From PC bus;
Student Hubs: Input:
100–240 VAC, 47–63 Hz, autosensing;
Output: +5 VDC, +12 VDC, -12 VDC
Line Multiplier:
Input: AC817A: 115 VAC, 60 Hz;
AC817AE: 220 VAC, 50 Hz;
Output: 9 VAC

Size:
Instructor Control Unit:
3.6"H x 8.6"W x 9"D
(9.1 x 21.8 x 22.9 cm);
Instructor Interface Unit:
2"H x 8.9"W x 6.5"D
(5.1 x 22.6 x 16.5 cm);
Instructor Interface Card: ¼ card;
Student Unit: 2"H x 7.7"W x 6.5"D
(5.1 x 19.6 x 16.5 cm);
4-Port Student Interface Unit:
1.8"H x 10.9"W x 5.6"D
(4.6 x 27.7 x 14.2 cm);
Student Interface Card: ¼ card
Line Multiplier:
4.5"H x 6.1"W x 3.5"D
(11.4 x 15.5 x 8.9 cm)

What the Package Includes

- CAT5 ClassWork Plus PC Instructor Interface Kit (AC840A-R2 or AC840AE-R2):
    – (1) Instructor Control Unit and control cable.
    – (1) Instructor Interface Unit.
    – (1) power supply.
    – Monitor, keyboard, and mouse cables (all necessary cables are included).
    – Users' manual.

- CAT5 ClassWork Plus PC Student Unit Kit (AC841C-R2) includes:
    – (1) Student Interface Card.
    – Monitor, keyboard, and mouse cables (all necessary cables are included).
    – Users' manual.

- CAT5 ClassWork Plus Standalone PC Student Unit (AC846A) includes:
    – (1) Standalone PC Student Unit.
    – Monitor, keyboard, and mouse cables (all necessary cables included).
    – (1) 6-ft. (1.8-m) CAT5 cable.
    – (1) power supply.
    – Users' manual.

- CAT5 ClassWork Plus Starter Kit (AC842A) includes:
    – (1) Instructor Control Unit and control cable.
    – (1) Instructor Interface Unit.
    – (3) Student Interface Cards.
    – Monitor, keyboard, and mouse cables (all necessary cables included).
    – (1) power supply.
    – Users' manual.

- CAT5 ClassWork Plus Multiloop (AC844A) includes:
    – (1) Multiloop unit.
    – (1) power supply.
    – Users' manual.

- ClassWork Plus Instructor Unit Kit (AC810A-R3 or AC810AE-R3) includes:
    – Instructor Control Unit (AC813A), consisting of function display and ergonomic click keypad. The instructor activates all functions via this unit.
    – Instructor Interface Unit (AC812A-R2, AC812AE-R2), located near the instructor's position, connecting the instructor's computer to the ClassWork Plus system.
    – (1) 6-ft. (1.8-m) 5-pin DIN cable male-to-male to connect the Instructor Control Unit to the Instructor Interface Unit.
    – (1) Power supply, external 115 VAC or 230 VAC, for Instructor Interface Unit.
    – (2) DB25 male terminators.
    – (1) 5-ft. (1.5-m) HD15 male-to-female VGA screen cable.
    – (2) 3.5" diskettes ([1] DOS, [1] Windows®) communications (file-transfer) software.
    – Users' manual.

- ClassWork Plus Student Interface Kit (AC811A-R3 and AC811AE-R3) includes the following:
    – Student Interface Unit (AC814A-R2, AC814AE-R2).
    – (1) Power supply, external 115 VAC or 230 VAC, for Student Interface Unit.
    – (1) 6.6-ft. (2-m) DB25 male-to-male network cable.
    – (1) 5-ft. (1.5-m) HD15 male-to-female VGA screen cable.
    – Users' manual.

Also available are Instructor and Student Interface Cards, which you can use in place of the Interface Units:

- ClassWork Plus Instructor PC Card (AC810C).

- ClassWork Plus Student PC Card (AC811C).

- ClassWork Plus for Mac Instructor Unit Kit (AC830A) includes:
    – (1) keypad/LCD control unit.
    – (1) interface unit.
    – (1) power supply.
    – Monitor, keyboard, and mouse cables (all necessary cables are included).
    – (2) network terminators.
    – (1) keyboard/mouse cable.
    – Users' manual.

- ClassWork Plus for Mac Student Unit Kit (AC831A) includes:
    – (1) interface unit.
    – (1) power supply.
    – Monitor, keyboard, and mouse cables (all necessary cables are included).
    – (1) network daisychain cable.
    – Users' manual.

- 4-Port Student Hub (AC815A or AC816A) includes:
    – (1) hub unit, links up to four students' computers using one interface unit.
    – (1) power supply.
    – Monitor, keyboard, and mouse cables (all necessary cables included for PS/2 type or AT type PCs).
    – Users' manual.

- Line Multiplier (AC817A or AC817AE) includes:
    – (1) Line Multiplier.
    – (1) power supply, 110 VAC or 220 VAC.
    – (1) 6.6-ft. (2-m) system cable.
    – (4) DB25 terminators.
    – Users' manual.

Why Buy From Black Box? Exceptional Value. Exceptional Tech Support. Period.

Recognize any of these situations?

• You wait more than 30 minutes to get through to a vendor's tech support.
• The so-called "tech" can't help you or gives you the wrong answer.
• You don't have a purchase order number and the tech refuses to help you.
• It's 9 p. m. and you need help, but your vendor's tech support line is closed.

According to a survey by Data Communications magazine, 90% of network managers surveyed say that getting the technical support they need is extremely important when choosing a vendor. But even though network managers pay anywhere from 10 to 20% of their overall purchase price for a basic service and support contract, the technical support and service they receive falls far short of their expectations—and certainly isn't worth what they paid.

At Black Box, we guarantee the best value and the best support. You can even consult our Technical Support Experts before you buy if you need help selecting just the right component for your application.

Don't waste time and money—call Black Box today.

▼ *Ordering Information*

ITEM	CODE
CAT5 ClassWork Plus	
PC Instructor Unit Kit, 115 VAC	AC840A-R2
PC Instructor Unit Kit, 230 VAC	AC840AE-R2
PC Student Unit Kit	AC841C-R2
Standalone PC Student Unit	AC846A
Starter Kit	AC842A
Multiloop	AC844A
ClassWork Plus	
Instructor Unit Kit, 115 VAC	AC810A-R3
Instructor Unit Kit, 230 VAC	AC810AE-R3
Student Unit Kit, 115 VAC	AC811A-R3
Student Unit Kit, 230 VAC	AC811AE-R3
Instructor Interface Unit, 115 VAC	AC812A-R2
Instructor Interface Unit, 230 VAC	AC812AE-R2
Instructor PC Card	AC810C
Instructor Control Unit	AC813A
Student Interface Unit, 115 VAC	AC814A-R2
Student Interface Unit, 230 VAC	AC814AE-R2
Student PC Card	AC811C
Student Hub 4-Port with Cables for PS/2	AC815A
Student Hub 4-Port with Cables for AT®	AC816A
Line Multiplier, 110 VAC	AC817A
Line Multiplier, 220 VAC	AC817AE
ClassWork Plus for Mac	
Instructor Unit Kit	AC830A
Student Unit Kit	AC831A
Cable for ClassWork, 10-ft. (3-m)	EHN315-0010
Cable for ClassWork, 20-ft. (6.1-m)	EHN315-0020
Cable for ClassWork, 30-ft. (9.1-m)	EHN315-0030
Cable for ClassWork, 50-ft. (15.2-m)	EHN315-0050

You may also need spare mouse and keyboard connections on a PC-based platform…

PS/2® Keyboard Cable	
(DB9 male to 6-pin mini-DIN male/female)	AC822
PS/2 Mouse Cable	
(DB9 female to 6-pin mini-DIN male/female)	AC823
PC Keyboard Cable	
(DB9 male to 5-pin mini-DIN male/female)	AC824
PC Mouse Cable	
(DB9 female to DB9 male/female)	AC825
Communication Software Cable	
(stereo plug track to DB9 Female)	AC826